

SUMMER BIRDS OF SOUTHWESTERN
SASKATCHEWAN.

BY A. C. BENT.

Plates XVII-XX.

THE development of the great Northwest, the extension of its progressive railroad systems, with new towns constantly springing up and all of the older towns and cities rapidly increasing in size, the steadily increasing movement of American, Canadian and foreign settlers westward and northward, and the inducements offered by the Canadian government and the railroads for opening up new and desirable lands for agricultural purposes, are making such rapid and marked changes in the great wild-fowl breeding grounds of northwest Canada, that it seems worth while to record the conditions as we found them during the summers of 1905 and 1906. Even during the one year intervening between my two visits to this region, the change was so striking as to indicate the passing away within the near future of nearly all of the great breeding resorts of this interesting region. Many of the rarer, shyer and larger birds have already disappeared and the others are being rapidly driven farther northward and westward, beyond the reach of railroads and beyond the cultivated lands of the ranchmen. The disappearance of the birds is not due to persecution, as they are seldom killed, and their eggs are not often taken for food, but the prairies are being cultivated, the sloughs are being drained and the whole country is being settled up so rapidly that they will soon have no suitable breeding grounds left.

Our observations were conducted mainly along the line of the Canadian Pacific Railway from a few miles west of the eastern boundary of Alberta to about fifty miles east of said boundary in that portion of Saskatchewan which was known as Assiniboia prior to 1906; and we explored, more or less thoroughly, much of the intervening territory, including the Cypress Hills, twenty miles south of the railroad and Big Stick Lake, thirty miles north of the railroad. We visited nearly all of the lakes from Many Island

Lake on the west to Lake of the Narrows on the east and explored most of the intervening creeks running northward into these lakes from the Cypress Hills region, particularly Maple Creek, Skull Creek, Mackaye Creek and Bear Creek.

In 1906 our party consisted of Rev. Herbert K. Job, of Kent, Conn., Mr. Chester S. Day of Boston, Mass., and the writer. I arrived on May 29 and left on June 17. The others arrived a few days earlier and Mr. Job remained a week after I had left.

In 1906 Dr. Louis B. Bishop of New Haven, Conn., and I reached Maple Creek on June 5; I was obliged to leave for home on July 1, but he remained until August. Mr. Alfred Eastgate of North Dakota joined us two weeks later, as taxidermist and general assistant. And Dr. Jonathan Dwight, Jr., of New York, joined the party after I left. Thus we were able to observe the last week of the spring migration in 1905 and a large part of the adult shore bird fall migration in 1906. I am indebted to all of these gentlemen for the use of their notes and particularly to Dr. Bishop for much valuable assistance in the comparison of material and the determination of subspecies. I also wish to acknowledge the kind assistance of Mr. William Brewster and Mr. H. C. Oberholser in identifying material. Specimens were collected of nearly all the birds on the list and where none were taken this fact is mentioned. Birds seen by others than the writer are entered on the authority of the observer. The only published list of the birds of this region that I have seen is contained in Prof. John Macoun's 'Catalogue of Canadian Birds,' to which I shall make occasional reference and endeavor to point out a few cases where our observations were at variance with this list. I am indebted to Prof. Macoun also for much valuable information regarding this region and for assistance in obtaining permits to collect.

The general topography of the region under consideration was rather uninteresting; the first impression of it was disappointing and it was not until we had made a more intimate acquaintance with its more highly favored sections that we began to realize its wonderful possibilities as a collecting ground. The contrast between the level, fertile prairies of western Manitoba and the desolate rolling plains of Saskatchewan was well marked. These plains were nowhere extensively level and were often quite hilly.



FIG. 1. ON THE PLAINS NORTH OF MAPLE CREEK.



FIG. 2. CYPRESS HILLS.

They exhibited three distinct types of soil, supporting three different kinds of vegetation and were more or less distinct faunally. For convenience I shall designate them as the prairies, the sandhills and the alkaline plains.

The prairies were practically devoid of all vegetation except a sparse, short growth of grass, which grew most sparingly on the hills and more luxuriantly in the hollows. A few scattered small rose bushes, stunted bits of sage-brush and two species of low-growing cacti, occasionally met with, were all that we found to relieve the monotony. The soil was hardly rich enough for cultivation, though wheat and flax were being successfully raised in many places with the aid of a little fertilizing; but for grazing purposes these portions of the plains, which comprised by far the greater part of the whole region, were well adapted and large scattered herds of horses, cattle and sheep roamed at will over vast areas. Thirty years ago the last of the buffalos disappeared, but their trails were still visible in many places — narrow, deeply worn pathways where countless herds had passed along in single file. Many of their wallows were also recognizable, but their bones had long since been picked up and sold; only an occasional skull or horn was to be found. Antelopes had been frequently seen in recent years but they were fast disappearing. Prairie wolves were not yet rare and we obtained several shots at them, at long range, but succeeded in killing only one. Badgers were fairly common and gophers were only too numerous. Birds were scarce on the prairies or so widely scattered that they appeared so. Long-billed Curlews and Bartramian Sandpipers found congenial homes in the grassy hollows; gulls were occasionally seen, particularly near the lakes; hawks were frequently seen sailing overhead or perched on fence posts or telegraph poles along the railroad, and if one had sharp ears he could often hear the flight song of Sprague's Pipit or more rarely see one soaring way up in the sky, a mere speck against the clouds. But the characteristic birds of the prairies were the Longspurs, Lark Buntings, Vesper Sparrows and Meadowlarks, and their delightful songs added much charm to a drive across the grassy plains.

Among the sandhills, though the soil was poorer and the ground often bare and sandy, there was sufficient nourishment to support

a considerable growth of underbrush, extensive patches of rose bushes, sage-brush and various willows, forming in some places dense thickets of the large willows, growing eight or ten feet high, with a few scattered poplar trees among them. The sandhills were the favorite resorts of the Prairie Sharp-tailed Grouse where they found congenial shelter among the willows and convenient dusting places in the sandy hollows. Nearly every available solitary tree — poplars, cottonwoods and willows — in such places was occupied by a hawk's, owl's or crow's nest, seldom more than 15 feet from the ground. The underbrush offered a congenial home for Clay-colored Sparrows where we found a number of nests in the small 'silver willows' and 'badger brush', close to the ground.

I designate as alkaline plains certain flat, level areas, sometimes two or three miles wide, which were probably once the beds of alkaline lakes, where the soil was strongly alkaline, forming slimy mud in wet weather, or baked hard and dry under the hot summer sun. Very little grass would grow in such places but the plains were well covered with a stunted growth of sage-brush and cactus. An occasional Burrowing Owl could be seen on the plains, but the characteristic birds of the region were Horned Larks, Vesper Sparrows and a few Lark Buntings, none of which were abundant. With this brief description of the three classes of plains, which in the aggregate comprised fully 95 per cent. of the whole region, we will leave this comparatively uninteresting phase of the subject and consider some of the more highly favored localities which we found much richer in bird life and therefore of much greater interest ornithologically.

The timber belts along the streams, or 'creeks' as they were called, proved to be the most fruitful collecting grounds and were fairly teeming with small birds of many species. Many of the creeks were practically treeless or nearly devoid of underbrush for long distances, but a large portion of Skull Creek and nearly the whole upper half of Maple Creek were more or less heavily timbered. The largest trees, poplars, balsms, cottonwoods, willows and box elders were generally well scattered along the banks of the streams, sometimes towering above the surrounding small trees and underbrush to a height of 30 or 40 feet but more often not exceeding 20 or 30 feet. Scattered groves of box elders 15 or

20 feet high often occupied flood plain areas from 50 to 100 yards wide; and, as they were frequently irrigated at periods of high water, they often supported a rank growth of underbrush which in some places had developed into dense thickets of willows, thorns, and other high growing shrubs. Most of the timber was of this class, an open growth of the larger trees, with thick patches of underbrush and occasional dense thickets among them. We occasionally found, however, dense shady groves of small poplars, balsms or quaking aspens, about 15 or 20 feet high, entirely devoid of underbrush, occupying limited areas in well watered bottom lands. The streams were all small, meandering sluggishly through devious courses which had been deeply cut below the level of the plains, leaving frequently high 'cut-banks'; they were generally shallow enough to wade and often narrow enough to jump across. During periods of heavy rain the streams soon became very much swollen; during the first week in June, 1906, we were favored with an unusually heavy rain fall which caused a rise of fully 10 feet in Maple Creek, submerging much of the timber and flooding the surrounding plains.

The largest trees contained the nests of Ferruginous Rough-legs or Swainson's Hawks which were often visible for long distances, as they stood out plainly above the surrounding timber. Hunting for hawk's nests was therefore a simple matter as it was merely necessary to drive along on the high land and examine the large trees with a glass. The available nesting sites for hawks were so limited that we found their nests quite numerous in all suitable timber; ten occupied nests were examined in a single day's drive of about twelve miles. The deserted nests of the larger hawks were sometimes occupied by Horned or Long-eared Owls. The box elder groves made satisfactory homes for the Sparrow Hawks, where we found them nesting in natural cavities or in deserted Flicker holes. Birds were more abundant in the open box elder groves than elsewhere in the timber, among which the Western House Wrens were decidedly the most numerous and most constantly in evidence; the woods were full of their delightful little bubbling songs and every small cavity in the dead branches or weather worn trunks of the box elders would sooner or later contain one of their nests. Hybrid Flickers of various colors were

common and excavated their nest holes in any of the larger trees. Nighthawks were frequently seen flying overhead or perched lengthwise on the horizontal branches. Brewer's Blackbirds were exceedingly numerous and noisy, protesting vigorously at our intrusion but their nests were usually too well concealed in the low thick underbrush for us to find them. Arkansas and common Kingbirds were much in evidence and clamorous, as usual, both species being about equally abundant. Clay-colored Sparrows were abundant in the underbrush, particularly along the outer edges, where Yellow-throats and Yellow Warblers were also very common. Robins, Catbirds, Song Sparrows and Least Flycatchers were all fairly common, an occasional Arctic Towhee was seen and the voice of the Willow Thrush was frequently heard in the depths of the shady thickets near the stream, though the birds themselves were seldom seen. Many other less prominent species were noted, as well as a number of rarities which will be found in the list, but the foregoing will give a fair idea of the characteristic birds most frequently seen.

From 15 to 20 miles south of the railroad lay the Cypress Hills, extending for approximately 50 miles east and west, nearly parallel with the railroad and visible at a long distance, their irregular outline forming the southern boundary of our view, like a distant chain of mountains. They were, however, rather low-lying hills, probably not over 300 or 400 feet above the general level of the plains. All of the creeks that we explored had their sources in these hills and flowed in a general northerly direction to the lakes, Mackaye Creek running into Many Island Lake, Hay Creek into Hay Lake, Maple Creek into Big Stick Lake, Piapot and Bear Creeks into Crane Lake, and Skull Creek into Lake of the Narrows. We were unable to explore more than a limited portion of the Cypress Hills but found them full of interesting material and well worthy of more extended investigation. The approaches to the hills and the outlying spurs, or what might be called the foothills, were merely continuations of the prairies, but the higher portions were extensively wooded with a low growth of poplars, balsams, aspens, willows and various shrubs. The interior valleys contained several small lakes or ponds and were watered by small creeks or brooks, supporting dense thickets of alders and willows.

The hills in the interior were largely covered with fair sized pines and spruces; we were told that large tracts of heavy coniferous timber existed here; several piles of large logs that we saw and the log cabins of some of the settlers bore testimony to the truth of this report. Many of the birds seen in the Cypress Hills were common to the whole region but the following species were noted here which were not seen elsewhere: Western Wood Pewee, Alder and Wright's Flycatchers, American Crossbill, White-crowned Sparrow, Pink-sided Junco, Orange-crowned, Audubon's and Macgillivray's Warblers and Alma's Thrush.

The most striking features of the whole region, the real ornithological wonders of the great Northwest, were the breeding grounds of the water-fowl. In my attempt to give some adequate idea of these marvelous wild-fowl nurseries I cannot do better than endeavor to describe two or three typical sloughs and islands that we visited, though I realize that my words cannot but fail to convey the impressions I received, for such things must be seen in order to be appreciated.

Many Island Lake was in reality a many island marsh, irregular in outline and approximately 6 miles in diameter, consisting of a series of wet meadows, low grassy islands, deep sloughs full of bulrushes or cattail flags, shallow sloughs overgrown with long grass and open pond like areas. We could drive from one island to another by crossing the shallower sloughs at favorable spots, but often narrowly escaped being badly mired. The islands were so nearly indistinguishable from the marshes that we could form no idea as to their number or extent. Some of the more clearly defined islands in the more open portions of the lake formed suitable breeding grounds for California and Ring-billed Gulls, Common Terns and Avocets where they could make their nests on the higher portions or along the shores on dry ground. Killdeers, Spotted Sandpipers and Willets were evidently breeding on some of the islands; Wilson's Phalaropes were abundant, we found their nests on the grassy islands and saw large flocks of females flying about over the marshes; a number of Yellow-legs were associated with them and possibly some of them were breeding here. A cloud of Franklin's Gulls were hovering over an extensive deep-water slough where we found them established in a large breeding

colony. In the same slough Western and American Eared Grebes were breeding as well as numerous Coots, Bitterns, Canvasbacks, Redheads, Ruddy Ducks and Yellow-headed Blackbirds, but collecting in these sloughs was impracticable as the water was too deep to wade even with our longest waders. All of the commoner ducks were exceedingly numerous, such as Mallards, Pintails, Gadwalls, Baldpates, Shovellers and Blue-winged Teals, and were nesting on the grassy islands and in the meadows. A few Forster's Terns were seen, and Marsh Hawks and Short-eared Owls were flying about over the meadows. The whole region was fairly swarming with water birds and to merely mention the species we recorded gives but a very meager idea of their actual abundance. It is to be hoped that this locality, so well adapted for their requirements, will remain for a long time undisturbed. It is poorly adapted for agricultural purposes and is ten miles distant from the nearest settlement. There are no suitable camping sites near it, as firewood and good drinking water are not easily available, and the myriads of mosquitos which infest this locality make the collector's life miserable. If it could be set aside as a government reservation and the birds could be protected, it would prove a safe asylum for many years.

While exploring a long, narrow strip of gravelly beach which extended well out into the waters of Big Stick Lake, on which numerous Piping Plovers and Common Terns were nesting, we noticed a small island, about 300 yards from the shore, over which a cloud of gulls were hovering. Numerous Avocets were flying back and forth between the island and the beach, a flock of Pelicans flew off and settled on the island, various ducks were swimming in the lake near it, and everything seemed to indicate that we should find it well worth visiting. The next day, June 14, 1906, our guide hitched up a pair of horses and drove us out to it, through the shallow water, landing us on a narrow point of beach. It was a low, flat island, surrounded by gravelly or muddy beaches, largely bare on the higher portions, except for a scattered growth of coarse dead weeds, but supporting quite a thick growth of long grass on the lower or flatter portion. It may have contained more than one acre of land but certainly not over two acres at the most. As we landed a flock of American White Pelicans flew off from

the farther end and a great cloud of California and Ring-billed Gulls arose from the center of the island, but we devoted our attention at first to the American Avocets which had flown out to greet us with their yelping notes of protest. Their nests were placed in the short grass near the beach or on the windrows of driftweed which lined the shores. There were not over a dozen pairs in the colony. A small colony of Common Terns were nesting in the short grass, two nests of Spotted Sandpipers were found, Wilson's Phalaropes were flying about, and specimens of Northern Phalaropes and Semipalmated Sandpipers were collected. In the long grass we found a Pintail's nest with nine eggs in the process of hatching and five ducks' nests, with apparently fresh eggs, which we took to be Baldpates, though we could not identify them with certainty, as the birds were not incubating. On the higher portion of the island, among the tall dead weeds, we found three ducks' nests, referred to hereafter under the American Merganser, which we were unable to satisfactorily identify. The California and Ring-billed Gull colony occupied the whole of the main portion of the island, which was thickly covered with their nests; we could form no accurate idea of their numbers, as we did not have time to count the nests, but to say that there were at least 1000 pairs of each species would be a conservative statement. The nests of the Ring-billed Gulls were chiefly on the higher portion of the island, while those of the California Gulls were mostly around the shores and on a bare, flat point, though both species were somewhat intermingled where the two colonies came together. I should say that about half of the eggs had hatched, for we found hundreds of the downy young hiding among the scanty vegetation and saw them swimming out from the shores in large numbers. This island was visited again, by the other members of our party, on July 18-21, 1906, when they found the bird population of the little island increased by a nesting colony of fourteen pairs of American White Pelicans and four pairs of Double-crested Cormorants. On the neighboring shores of the lake and on the adjacent meadows and prairies the shore birds were well represented by numerous Long-billed Curlews, Western Willets, Marbled Godwits and Killdeers, all of which were breeding in the immediate vicinity.

The most interesting locality of all was the duck island in Crane

Lake and its surrounding sloughs at the mouth of Bear Creek, where the water-fowl were breeding in such great profusion and in such a limited area, less than one square mile, as to make it the crowning glory of the whole region. We spent considerable time here both seasons and recorded in all 35 species of birds, mostly water-fowl and shore-birds, that were either breeding or probably preparing to breed within this limited area. On the prairies and meadows near the lake we found scattered nests of various ducks, where Long-billed Curlews, Western Willets and Marbled Godwits were also breeding. On the shores of the lake and the island American Avocets, Killdeers and Spotted Sandpipers were nesting. The extensive deep-water sloughs, surrounding the island, which were filled with scattered clumps of tall bulrushes, concealed the nests of hundreds of Western Grebes, American Coots and American Bitterns. A fair sized colony of Franklin's Gulls was found and a number of nests of Horned and American Eared Grebes. Large flocks of Canvasbacks and Redheads were constantly floating in the lake or flying over us, though we succeeded in finding only a few nests of each. Small flocks of Ruddy Ducks frequently darted past us and we saw the gaudy little males swimming among the reeds. Thousands of Yellow-headed Blackbirds kept up a constant din all through the sloughs and Red-winged Blackbirds were nesting about the edges, where a few Soras were also seen.

The island was about 300 or 400 yards in length by about 100 yards in width, fairly high at one end and everywhere covered with a thick growth of long grass, through which were scattered on the higher portion numerous small clumps and in some places large patches of rose bushes, offering ideal conditions as a breeding ground for ducks. There were several small ponds near the center of it lined with fringes of cattails and bulrushes. On the lower portion of the island the grass was shorter, and where it extended out into a point the ground was bare. A colony of Common Terns occupied this point, which was also the favorite resort of a flock of White Pelicans which may have bred here later in the season. Marbled Godwits, Wilson's Phalaropes and Spotted Sandpipers were breeding here as well as Western Savanna Sparrows. A pair of Crows had a nest in the only tree on the island, a small

willow, and they must have fared sumptuously on stolen duck's eggs. A pair of Short-eared Owls had a nest on the island containing young in various stages of growth. On June 17, 1905, Mr. Job and I attempted to make a careful census of the ducks breeding on the island, by dragging it as thoroughly as we could with a long rope and recording the nests as the ducks were flushed. We were unable to drag the whole island as the rose bushes were too thick in many places, but in the course of two hours' work we recorded 61 nests, as follows: Mallard, 5 nests; Gadwall, 23 nests; Baldpate, 3 nests; Green-winged Teal, 2 nests; Blue-winged Teal, 10 nests; Shoveller, 7 nests; Pintail, 8 nests; and Lesser Scaup Duck, 3 nests. The ducks were identified to the best of our ability by eyesight; the female Gadwalls and Baldpates were very difficult to distinguish and there may have been more of the latter than we supposed, but certainly both species were nesting there, as we saw a number of males in the small pond-holes; the Green-winged Teals' nests were identified by seeing the female join a male of that species. We started a number of ducks, mostly Pintails, where we failed to find nests, which probably meant broods of young and which were not counted. Most of the sets were incomplete or fresh indicating that the ducks were only just beginning to lay; we therefore must have overlooked a great many nests, where the eggs were covered and no ducks flushed, as we found a number of such nests by accident. Considering these facts, making allowance for the unexplored parts of the island and judging from the immense numbers of ducks that were flying about or bedded out on the lake, I considered it fair to assume that at least 150 pairs of ducks were breeding or preparing to breed on this one island. In addition to the species above recorded, we saw on the island several American Mergansers, a White-winged Scoter and one Cinnamon Teal, making a total of 14 species of ducks which were probably breeding on the island or in the sloughs around it, of which we actually found the nests of 11 species. Prof. Macoun recorded the American Scaup Duck as breeding here, but we were unable to identify any with certainty; I found a nest in the slough near this island which I feel fairly confident was a Ring-necked Duck's nest, but I was unable to shoot the bird; these two species must therefore be considered of doubtful occurrence, at present. As may be imagined, it was with considerable interest and pleasant

anticipation that I revisited this island in 1906, but I was most keenly disappointed to find it practically deserted. Instead of the immense flocks of ducks which I had seen rise from the sloughs like clouds of mosquitos, only a few scattered flocks were seen. As we walked across the island expecting to see ducks flying up all about us, hardly a duck arose, and in place of the 60 odd nests that we expected to find only 3 nests were found. The mystery was soon solved by finding a nestful of broken eggs and bunches of yellowish hair clinging to the rose bushes. A coyote had been living on the island and had cleaned out all of the nests and driven the ducks away. The destruction of the bird population of the island had been still further carried on by a family of minks and the entrance to their den was strewn with feathers. Whether the ducks will ever return to this island or not is an open question, but probably they have moved to some safer spot.

Such were the conditions as we found them in the localities we visited and I have no reason to think that they were exceptional. I have no doubt that similar conditions still prevail throughout nearly all of the unsettled portions of the northwestern plains. We passed in the train many similar localities, which looked equally attractive, where birds were apparently equally abundant, and, had we selected some other section and worked it up as thoroughly, I have no doubt that the results would have been similar. But there can be no doubt that these conditions are rapidly passing away, and unless something can be accomplished towards setting apart some extensive reservations where the birds can breed in safety and be protected against the encroachments of civilization, the glories of this region will soon become mere memories of the past.

In the following list of species I have endeavored to follow, as far as possible, the nomenclature, as it now stands, in the present A. O. U. Check-List without attempting to adopt even such changes as are definitely decided upon. I realize that the list is far from complete, owing to the limited time devoted to field work, but it seems worth while to publish it as a basis for further work and as a contribution to our knowledge of the birds of an interesting region. I trust it will serve to throw some light on the distribution of certain western species and subspecies and help to define their breeding ranges more accurately.



FIG. 1. NESTS OF WESTERN GREBE.



FIG. 2. SLOUGH AT REEDY LAKE. NESTING SITE OF WESTERN GREBE.

1. *Aechmophorus occidentalis*. WESTERN GREBE.—Abundant in all of the deep water sloughs where its nests were floating in water from two to three feet deep, among the bulrushes. There was a very large breeding colony at Crane Lake in 1905, which had nearly doubled in size in 1906, so that it must have contained several hundred pairs. Eggs were found at various dates between June 8 and 26, and young birds were seen on June 8, 1905, but very few of the eggs were hatched before the end of June. We noticed a great mortality among these birds in 1905, finding their dead bodies floating near their nests or lying on them, sometimes two birds at one nest. We were unable to account for this unless it was done by muskrats, which were common in the sloughs. Most of the nests contained 3 eggs, some 2, some 4, and one the unusual number of 11; this last was apparently the work of several birds.

2. *Colymbus holboëllii*. HOLBØELL'S GREBE.—This species was recorded by Prof. Macoun at Indian Head, Assa., and at Snake Lake, Alberta. I saw a grebe at Crane Lake on June 7, 1905, which I took to be Holboëll's, but none were collected either season and no others were seen, so I consider my record very doubtful.

3. *Colymbus auritus*. HORNE GREBE.—Uncommon in 1905, rare in 1906. A few pairs were found breeding in the Crane Lake sloughs and, as they were quite tame, were easily identified, though none were taken. Nests were found on June 7, 1905, and on June 22, 1906, in the Western Grebe colony, containing from 5 to 9 eggs.

4. *Colymbus nigricollis californicus*. AMERICAN EARED GREBE.—Common. Breeding in all of the sloughs and laying usually 4 or 5 eggs. They were found breeding quite abundantly in a large breeding colony of Franklin's Gulls, at Lake of the Narrows, on June 10 and 12, 1905, at which time all of the eggs collected were fresh. Nests were also found on June 22, 23 and 26, 1906.

5. *Larus californicus*. CALIFORNIA GULL.—Common, on or about all of the larger lakes and about the garbage piles near the towns. A large breeding colony of this and the following species was found on an island in Big Stick Lake, on June 14, 1906, at which time about half of the eggs had hatched.

Prof. Macoun recorded the Herring Gull as breeding at Crane Lake, but we did not meet with it at all and I am confident that the birds he saw should be referred to this species. We collected quite a series of large gulls and all of them were either *californicus* or *delawarensis*.

6. *Larus delawarensis*. RING-BILLED GULL.—Common. Seen regularly at all of the lakes we visited. The only breeding colony found was the one referred to under the foregoing species.

7. *Larus franklinii*. FRANKLIN'S GULL.—Abundant about all the lakes and sloughs. Small flocks of Franklin's Gulls were frequently seen, towards evening, skimming low over the meadows after the manner of swallows and apparently catching insects on the wing. An immense breeding colony of these gulls was found at Lake of the Narrows on June

9, 1905, where they were nesting in a large shallow bulrush slough. They occupied an area approximately 1000 yards long by 100 yards wide and by counting the nests in an area 10 yards square, I estimated that there were from 15,000 to 20,000 nests in the colony. Many of the eggs that we collected were heavily incubated and some of them were hatching at that time. We visited this colony in 1906 but were disappointed to find it entirely deserted, probably owing to the fact that the slough had been nearly dry earlier in the season when they were beginning to breed. We found three other, smaller, breeding colonies in 1906 at Crane Lake, Reedy Lake and Many Island Lake, finding eggs as late as June 26.

8. *Sterna forsteri*. FORSTER'S TERN.—Rare. A few birds were seen at Many Island Lake on June 18, 1906, and on July 9 two specimens were taken here by Dr. Bishop. This species is not recorded by Prof. Macoun farther west than Indian Head.

9. *Sterna hirundo*. COMMON TERN.—Common but nowhere very abundant. Found breeding at all of the larger lakes, principally on the islands. Eggs were found on June 1 and 7, 1905, on June 13, 14 and 15 and on July 9, 1906.

Scattering birds were frequently seen near the creeks at long distances from the lakes.

10. *Hydrochelidon nigra surinamensis*. BLACK TERN.—Common in certain localities, particularly shallow sweet water sloughs or wet meadows, over which a number of these terns were generally to be seen hovering. It was only in these shallow grassy sloughs that we found them breeding where their eggs were laid on floating masses of dead vegetation. They are late breeders. We did not find their eggs until June 24, 1906, when several fresh sets were collected.

11. *Phalacrocorax dilophus*. DOUBLE-CRESTED CORMORANT.—Although this species is recorded by Prof. Macoun as breeding at Crane Lake, I did not see it at all either season. But Dr. Bishop reports finding four nests, with from 1 to 3 eggs each, on the island in Big Stick Lake, on July 21, 1906. I visited this island on June 14 and 15, 1906, but no cormorants were seen. No specimens were taken but they were undoubtedly of this species.

12. *Pelecanus erythrorhynchos*. AMERICAN WHITE PELICAN.—Common. Flocks of pelicans were seen almost daily at Crane Lake and at Big Stick Lake, frequenting the islands, but I was unable to find them breeding. The others were more fortunate for on July 18 and 21, 1906, they found 14 nests on the island in Big Stick Lake, 4 with 1 egg and 10 with 2 eggs each. Either these birds are late breeders or their first nests had been destroyed. A large flock of pelicans containing at least 150 birds was seen at Many Island Lake on July 13, 1906.

13. *Merganser americanus*. AMERICAN MERGANSER.—Uncommon. One or two birds were seen by Mr. Job at Crane Lake on June 15, 1905, and we saw a flock of 11 birds here on June 23, 1906.

On the island in Big Stick Lake on June 14, 1906, we found 3 ducks'

nests which we were unable to identify, containing 4, 8 and 9 eggs respectively. The eggs greatly resembled Redheads' and the nests were profusely lined with white down, but, as the nests were built on dry ground, partially concealed among coarse dead weeds, they may have belonged to this species. No mergansers were seen in the vicinity whereas several Redheads were seen on the lake. According to my experience the Redhead always builds its nest in water in a slough, but this may have been a departure from its usual custom. I regret exceedingly that none of the eggs were collected. No birds of this species were taken.

14. *Lophodytes cucullatus*. HOODED MERGANSER.—Two young birds, identified by Mr. Eastgate as this species, were seen but not taken on the timbered portion of Maple Creek on June 30, 1906. This region is not well suited for their requirements and they were probably merely stragglers.

15. *Anas boschas*. MALLARD.—Uncommon, but frequently seen in pairs or singly at various lakes and on nearly all of the creeks. The only nests found, 7 in all, were on the island in Crane Lake, 5 nests on June 17, 1905, and one each on June 13, 1905, and June 23, 1906.

16. *Chaulelasmus streperus*. GADWALL.—Abundant everywhere, the commonest of the ducks. We found in all 29 nests from June 10 to 17 in 1905 and on June 18 and 23 in 1906. Most of these nests were on the islands in the lakes, but some of them were on the meadows or prairies which we found by flushing the birds as we drove along. Downy young were taken on August 3, 1906.

17. *Mareca americana*. BALDPATE. Uncommon, but possibly commoner than we supposed, as it is difficult to distinguish, the female particularly, from the Gadwall. Frequently seen singly or in pairs on the creeks or in small pond holes, as well as on the larger lakes.

No nests were positively identified, but I am confident that we found at least 6 or 8 nests of this species, for they were certainly breeding on the islands with the other ducks.

18. *Nettion carolinensis*. GREEN-WINGED TEAL.—Rare. This species was undoubtedly breeding on the island in Crane Lake with the other ducks, as we saw them swimming in pairs in the little pond holes, and Mr. Job feels sure that he identified 2 nests, as belonging to this species, which we found here on June 17, 1905. Dr. Bishop also found and identified 2 nests of this species, shooting the female in each case, one in a meadow near Hay Creek on July 3 and one at Many Island Lake, on July 9, 1906, on dry ground among the bushes on a small island.

19. *Querquedula discors*. BLUE-WINGED TEAL.—Abundant. Found breeding on the islands and on the meadows near the lakes, 16 nests in all, between June 13 and July 9. One or more pairs of Blue-winged Teals were flushed from almost every little pond hole. Downy young were found on August 2, 1906.

20. *Querquedula cyanoptera*. CINNAMON TEAL.—Very rare or accidental. I saw and think I positively identified a male of this species on Hay Creek on June 1, 1905, and another at Crane Lake on June 17, 1905,

though my failure to collect either specimen renders the record doubtful. None were seen in 1906.

21. *Spatula clypeata*. SHOVELLER.— Abundant. This and the Blue-winged Teal rank next to the Gadwall in abundance. We found Shovellers breeding on all of the islands, on the meadows near the lakes and on the prairies at considerable distances from any water. Twelve nests were recorded at various dates all through the month of June. The birds were constantly in evidence on all the lakes and small pond holes.

Downy young were found on August 1, 1906, and eggs as late as July 9, 1906.

22. *Dafila acuta*. PINTAIL.— Common. Found breeding on the islands, on the meadows and on the prairies. One nest was found under a rose bush in the sand hills, one mile from the nearest creek and two miles from the nearest lake. Nests with eggs were found, 11 in all, from June 2 to 17, 1905, and broods of young were found on June 13, 1905, and on June 14 and 21, 1906. This duck is one of the earliest breeders. Pintails were more frequently seen on the larger lakes than elsewhere.

23. *Aythya americana*. REDHEAD.— Very common, about the larger lakes. Found breeding in all the sloughs. Nests were found on June 7, 1905, and on June 18, 1906. A few eggs of this species were generally to be found in all of the Canvasback's nests. These two species have a peculiar habit of building what we called dumping nests in which large numbers of eggs are deposited but apparently not incubated; we found two such nests, one of which contained 19 eggs, 9 of the Redhead and 10 of the Canvasback, piled up indiscriminately and some of them had rolled out of the nest which was partially broken down and evidently deserted.

24. *Aythya vallisneria*. CANVASBACK.— Very common. Large flocks of males were seen at Crane Lake and at Hay Lake, bedded away out from shore or flying about. We found them breeding in the Crane Lake sloughs. Nests were found on June 7, 1905, and on June 26, 1906. The nests were generally well concealed in the thick clumps of bulrushes and were hard to find. No birds were taken.

25. *Aythya marila*. SCAUP DUCK.— Of doubtful occurrence. This species was recorded by Prof. Macoun as breeding at Crane Lake, but, though we saw several that looked large enough to be of this species, none were collected or positively identified. No eggs were found which were referable to this species.

26. *Aythya affinis*. LESSER SCAUP DUCK.— Common. Found breeding at Crane and Hay Lakes; 6 nests were recorded, 3 on June 17, 1905, and one each on June 28 and 29 and July 3, 1906. These ducks were frequently seen swimming in pairs in the small pond holes and in the grassy, shallow places in the creeks, where they were quite tame. All of the Scaup Ducks that we collected were of this species. Downy young were found on August 2, 1906.

27. *Charitonetta albeola*. BUFFLE-HEAD.— Very rare or doubtful. A small duck was seen at Crane Lake in 1905 which was apparently a



FIG. 1. NEST OF CANADA GOOSE ON AN ISLAND IN CRANE LAKE.



FIG. 2. YOUNG LONG-BILLED CURLEW.

Buffle-head. The species was recorded by Prof. Macoun as breeding in Alberta and at Rush Lake, Saskatchewan.

28. *Oidemia deglandi*. WHITE-WINGED SCOTER.—Rare. Only three pairs were located. One nest was found, containing 9 fresh eggs, on June 28, 1906. It was well concealed under a thick clump of rose bushes near a small slough.

29. *Erismatura jamaicensis*. RUDDY DUCK.—Common in all the sloughs, where it breeds. It occasionally lays its eggs in the nests of other ducks, particularly the Canvasback and Redhead. We found a Western Grebe's nest containing 2 eggs of the grebe and one of the Ruddy Duck. I also flushed a female Ruddy Duck from a small clump of bulrushes which contained only grebe's nests and I think she was preparing to lay in one of them.

30. *Branta canadensis*. CANADA GOOSE.—Common on all of the larger lakes. Although it is an early breeder, 2 nests containing 6 eggs each were found at Crane Lake, on a small island, on June 2, 1905; these were undoubtedly second sets.

The geese were seen flying about in small flocks on June 2 and 8, 1905, and on June 9, 1906. No birds were taken.

31. *Olor columbianus*. WHISTLING SWAN.—One was seen at Crane Lake, on June 23, 1906, by Mr. Eastgate, probably this species. We were told that they were very abundant on the larger lakes on the migrations, particularly in the spring, but, so far as we could learn, they had not been known to breed here within recent years. We saw a fine specimen in a local taxidermist's shop.

We could learn nothing definite about the occurrence of the Trumpeter Swan in this region.

32. *Botaurus lentiginosus*. AMERICAN BITTERN.—Very common in all the sloughs, nesting abundantly in the thick bulrushes or cattail flags, where 5 nests were found in one day. It was also found nesting in the wet grassy meadows and once on a nearly dry meadow in short grass. Nests with eggs were found on June 7 and 13, 1905, and on June 22 and 24, 1906.

33. *Ardea herodias*. GREAT BLUE HERON.—A colony of about 20 pairs was found breeding in the Skull Creek timber on June 5, 1905. The nests were from 15 to 25 feet from the ground in the tops of the tallest box elder trees, sometimes 2 or 3 nests in one tree. Most of the nests contained small young or heavily incubated eggs, from 4 to 6 in number.

We visited this rookery again in 1906 but were disappointed to find it entirely deserted though showing signs of recent occupancy. A search through the grove revealed the evidences of a camp, probably made by Indians, about which were scattered the wings and feet of our herons. They had killed or driven away every bird and probably eaten the eggs or young. No birds were collected.

34. *Grus canadensis*. LITTLE BROWN CRANE.—A mounted specimen was seen in a taxidermist's shop in Maple Creek, said to have been taken in that vicinity.

35. **Grus mexicana.** SANDHILL CRANE.— Only one crane, probably this species, was seen from the train on May 28, 1905.

This is one of the species that has probably been driven farther north since the country became settled. Nothing could be learned of its occurrence here in the breeding season in recent years.

36. **Porzana carolina.** SORA.— Probably commoner than we supposed, but restricted to the shallow sloughs or wet meadows, where we spent very little time. We found a few pairs breeding in such places and saw nests with eggs on June 24, 1906.

37. **Fulica americana.** AMERICAN COOT.— Common in all the sloughs. A great many nests were found on various dates, as early as June 7, 1905, and as late as June 24, 1906. No birds were taken.

38. **Phalaropus lobatus.** NORTHERN PHALAROPE.— Abundant migrant. A few may breed. Seen migrating on May 29, 1905, in large flocks with Sanderlings. One was seen at Hay Lake on June 15, 1905. Two were taken at Big Stick Lake on June 14, 1906, which were in breeding condition.

Dr. Bishop saw a flock of 100 at Many Island Lake on July 13, 1906, which was the beginning of the fall migration. He found them still more abundant at Big Stick Lake on July 19, 1906. "Nearly all of the birds taken on these two dates were females.

39. **Steganopus tricolor.** WILSON'S PHALAROPE.— Very common on the wet meadows about the lakes and sloughs and on the islands, where its nest is concealed in the short grass. Nests were found on June 8 and 17, 1905, June 18, 21 and 24, and July 13, 1906, with eggs. Downy young, recently hatched, were found on June 17, 1905. Large flocks of females were seen flying about at Many Island Lake on June 18, 1906, accompanied by a few Yellow-legs.

The almost complete reversal of the domestic relation of the sexes in this species is very interesting. The females are larger than the males and much more brilliantly colored. Two females were frequently seen chasing a single male and paying courtship to him. I observed a male building a nest in which the female did not seem to be interested and, so far as I could learn, the males performed all the duties of incubation and took charge of the young. As soon as the eggs were laid the females gathered into flocks and left the males to perform all the domestic duties.

40. **Recurvirostra americana.** AMERICAN AVOCET.— Abundant about all of the lakes and most of the small alkaline ponds. We found no large breeding colonies, but saw many small scattered colonies, the largest of which may have contained 15 or 20 pairs. The largest colony was on an alkali mud flat at Hay Lake where the nests were mere hollows in the mud, among the scattered tufts of short curly grass with which the flats were scantily covered. Owing to their protective coloration, the eggs were very difficult to see, even in such an open situation. A few isolated nests were also found along the shores of the lakes and on the islands, notably at Big Stick Lake. Four eggs was the usual number but two nests were